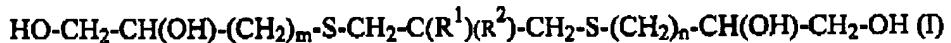


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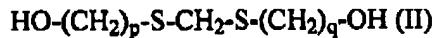
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AMENDMENTS TO THE CLAIMS

1. (Original) A layer configuration on a support, said layer configuration comprising a layer containing a polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units, in which said two alkoxy groups may be the same or different or together represent an optionally substituted oxy-alkylene-oxy bridge, and a compound selected from the group consisting of polyphosphoric acids, polyphosphoric acid salts, thia-alkanedicarboxylic acids, cyclohexadiene compounds and polyhydroxy-compounds selected from the group consisting of tetrone acid derivatives; ortho-dihydroxybenzene compounds with at least one sulfo group, compounds according to formula (I):

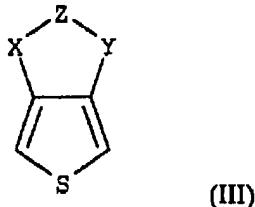


wherein R^1 and R^2 are independently H, -OH or alkyl, and n and m are independently 1, 2 or 3; compounds according to formula (II):



wherein p and q are independently 2, 3 or 4; compounds hydrolyzable to tetrone acid derivatives; compounds hydrolyzable to compounds according to formula (I); and sulfo-substituted 2-thia-alkyl-benzimidazole compounds.

2. (Original) Layer configuration according to claim 1, wherein said optionally substituted 3,4-alkylenedioxythiophene structural units are represented by formula (III):

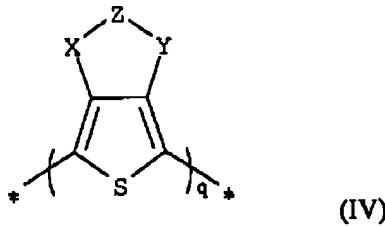


in which X and Y are O, Z is $-(\text{CH}_2)_m\text{-CR}^3\text{R}^4\text{-(CH}_2\text{)}_n\text{-}$; R^3 is hydrogen or $-(\text{CH}_2)_s\text{-O-(CH}_2\text{)}_p\text{-SO}_3^-\text{M}^+$; R^4 is $-(\text{CH}_2)_s\text{-O-(CH}_2\text{)}_p\text{-SO}_3^-\text{M}^+$; M^+ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18.

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3. (Original) Layer configuration according to claim 1, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is a polythiophene according to formula (IV)



in which X and Y are O; Z is $-(CH_2)_m-CR^3R^4-(CH_2)_n$; R^3 is hydrogen or $-(CH_2)_s-O-(CH_2)_p-SO_3^-M^+$; R^4 is $-(CH_2)_t-O-(CH_2)_p-SO_3^-M^+$; M^+ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18; and q is a whole number from 2 to 10,000.

4. (Original) Layer configuration according to claim 1, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly[4-(2,3-dihydro-thieno[3,4-*b*][1,4]dioxin-2-yl)methoxy]-butane-1-sulphonic acid].

5. (Original) Layer configuration according to claim 1, wherein said polymer is selected from the group consisting of: poly(3,4-methylenedioxy-thiophene), poly(3,4-methylenedioxythiophene) derivatives, poly(3,4-ethylenedioxythiophene), poly(3,4-ethylenedioxy-thiophene) derivatives, poly(3,4-propylenedioxythiophene), poly(3,4-propylenedioxythiophene) derivatives, poly(3,4-butylenedioxythiophene), poly(3,4-butylenedioxythiophene) derivatives and copolymers therewith.

6. (Original) Layer configuration according to claim 1, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly(3,4-ethylenedioxythiophene).

7. (Original) Layer configuration according to claim 1, wherein said layer further contains a polyanion.

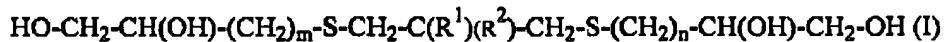
8. (Original) Layer configuration according to claim 7, wherein said polyanion is poly(styrene sulphonate).

9. (Original) A light emitting diode consisting of a layer configuration on a support, said layer configuration comprising a layer containing a polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units, in which said two alkoxy groups may be the same or different or together represent an optionally substituted oxy-alkylene-oxy bridge, and a compound selected from the group consisting of polyphosphoric acids, polyphosphoric acid salts, thia-alkanedicarboxylic acids,

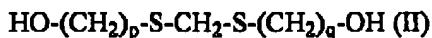
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cyclohexadiene compounds and polyhydroxy-compounds selected from the group consisting of tetronic acid derivatives; ortho-dihydroxybenzene compounds with at least one sulpho group, compounds according to formula (I):

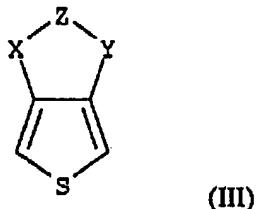


wherein R^1 and R^2 are independently H, -OH or alkyl; and n and m are independently 1, 2 or 3; compounds according to formula (II):



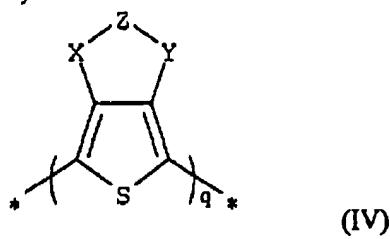
wherein p and q are independently 2, 3 or 4; compounds hydrolyzable to tetronic acid derivatives; compounds hydrolyzable to compounds according to formula (I); and sulpho-substituted 2-thia-alkyl-benzimidazole compounds.

10. (Original) Light emitting diode according to claim 9, wherein said optionally substituted 3,4-alkylenedioxythiophene structural units are represented by formula (III):



in which X and Y are O, Z is $-(\text{CH}_2)_m\text{-CR}^3\text{R}^4\text{-(CH}_2)_n\text{}$; R^3 is hydrogen or $-(\text{CH}_2)_s\text{-O-}(\text{CH}_2)_p\text{-SO}_3\text{M}^+$; R^4 is $-(\text{CH}_2)_s\text{-O-(CH}_2)_p\text{-SO}_3\text{M}^+$; M^+ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18.

11. (Original) Light emitting diode according to claim 9, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is a polythiophene according to formula (IV)

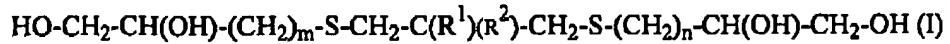


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in which X and Y are O; Z is $-(CH_2)_m- CR^3 R^4 -(CH_2)_n-$; R³ is hydrogen or $-(CH_2)_s-O-(CH_2)_p-SO_3^- M^+$; R⁴ is $-(CH_2)_s-O-(CH_2)_p-SO_3^- M^+$; M⁺ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18; and q is a whole number from 2 to 10,000.

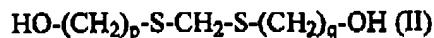
12. (Original) Light emitting diode according to claim 9, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly[4-(2,3-dihydro-thieno[3,4-*b*][1,4]dioxin-2-ylmethoxy)-butane-1-sulphonic acid].
13. (Original) Light emitting diode according to claim 9, wherein said polymer is selected from the group consisting of: poly(3,4-methylenedioxy-thiophene), poly(3,4-methylenedioxythiophene) derivatives, poly(3,4-ethylenedioxythiophene), poly(3,4-ethylenedioxy-thiophene) derivatives, poly(3,4-propylenedioxythiophene), poly(3,4-propylenedioxythiophene) derivatives, poly(3,4-butylenedioxythiophene), poly(3,4-butylenedioxythiophene) derivatives and copolymers therewith.
14. (Original) Light emitting diode according to claim 9, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly(3,4-ethylenedioxythiophene).
15. (Original) Light emitting diode according to claim 9, wherein said layer further contains a polyanion.
16. (Original) Light emitting diode according to claim 15, wherein said polyanion is poly(styrene sulphonate).
17. (Original) A photovoltaic device consisting of a layer configuration on a support, said layer configuration comprising a layer containing a polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units, in which said two alkoxy groups may be the same or different or together represent an optionally substituted oxy-alkylene-oxy bridge, and a compound selected from the group consisting of polyphosphoric acids, polyphosphoric acid salts, thia-alkanedicarboxylic acids, cyclohexadiene compounds and polyhydroxy-compounds selected from the group consisting of tetrone acid derivatives; ortho-dihydroxybenzene compounds with at least one sulpho group, compounds according to formula (I):



wherein R¹ and R² are independently H, -OH or alkyl, and n and m are independently 1, 2 or 3; compounds according to formula (II):

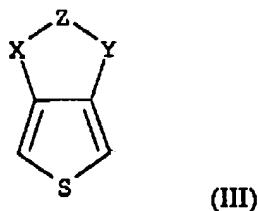
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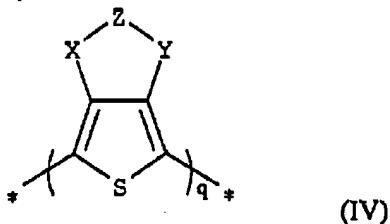
wherein p and q are independently 2, 3 or 4; compounds hydrolyzable to tetronic acid derivatives; compounds hydrolyzable to compounds according to formula (I); and sulpho-substituted 2-thia-alkyl-benzimidazole compounds.

18. (Original) Photovoltaic device according to claim 17, wherein said optionally substituted 3,4-alkylenedioxythiophene structural units are represented by formula (III):



in which X and Y are O, Z is $-(\text{CH}_2)_m\text{-CR}^3\text{R}^4\text{-(CH}_2\text{)}_n$; R^3 is hydrogen or $-(\text{CH}_2)_s\text{-O-(CH}_2\text{)}_p\text{-SO}_3^-\text{M}^+$; R^4 is $-(\text{CH}_2)_s\text{-O-(CH}_2\text{)}_p\text{-SO}_3^-\text{M}^+$; M^+ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18.

19. (Original) Photovoltaic device according to claim 17, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is a polythiophene according to formula (IV)



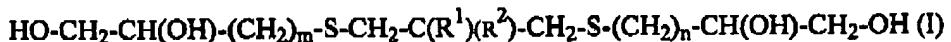
in which X and Y are O; Z is $-(\text{CH}_2)_m\text{-CR}^3\text{R}^4\text{-(CH}_2\text{)}_n$; R^3 is hydrogen or $-(\text{CH}_2)_s\text{-O-(CH}_2\text{)}_p\text{-SO}_3^-\text{M}^+$; R^4 is $-(\text{CH}_2)_s\text{-O-(CH}_2\text{)}_p\text{-SO}_3^-\text{M}^+$; M^+ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18; and q is a whole number from 2 to 10,000.

20. (Original) Photovoltaic device according to claim 17, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly[4-(2,3-dihydro-thieno[3,4-*b*][1,4]dioxin-2-ylmethoxy)-butane-1-sulphonic acid].

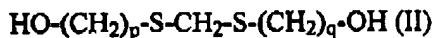
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21. (Original) Photovoltaic device according to claim 17, wherein said polymer is selected from the group consisting of: poly(3,4-methylenedioxy-thiophene), poly(3,4-methylenedioxythiophene) derivatives, poly(3,4-ethylenedioxythiophene), poly(3,4-ethylenedioxy-thiophene) derivatives, poly(3,4-propylenedioxythiophene), poly(3,4-propylenedioxythiophene) derivatives, poly(3,4-butylenedioxythiophene), poly(3,4-butylenedioxythiophene) derivatives and copolymers therewith.
22. (Original) Photovoltaic device according to claim 17, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly(3,4-ethylenedioxythiophene).
23. (Original) Photovoltaic device according to claim 17, wherein said layer further contains a polyanion.
24. (Original) Photovoltaic device according to claim 23, wherein said polyanion is poly(styrene sulphonate).
25. (Original) A solar cell consisting of a layer configuration on a support, said layer configuration comprising a layer containing a polymer containing optionally substituted 3,4-alkylenedioxy-thiophene structural units, in which said two alkoxy groups may be the same or different or together represent an optionally substituted oxy-alkylene-oxy bridge, and a compound selected from the group consisting of polyphosphoric acids, polyphosphoric acid salts, thia-alkanedicarboxylic acids, cyclohexadiene compounds and polyhydroxy-compounds selected from the group consisting of tetrone acid derivatives; ortho-dihydroxybenzene compounds with at least one sulfo group, compounds according to formula (I):



wherein R¹ and R² are independently H, -OH or alkyl, and n and m are independently 1, 2 or 3; compounds according to formula (II):

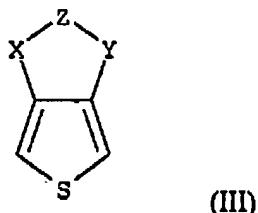


wherein p and q are independently 2, 3 or 4; compounds hydrolyzable to tetrone acid derivatives; compounds hydrolyzable to compounds according to formula (I); and sulfo-substituted 2-thia-alkyl-benzimidazole compounds.

26. (Original) Solar cell according to claim 25, wherein said optionally substituted 3,4-alkylenedioxythiophene structural units are represented by formula (III):

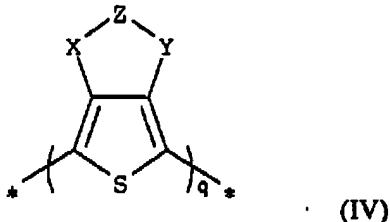
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in which X and Y are O, Z is $-(CH_2)_m-CR^3R^4-(CH_2)_n-$; R^3 is hydrogen or $-(CH_2)_s-O-(CH_2)_p-SO_3^{\cdot}M^+$; R^4 is $-(CH_2)_s-O-(CH_2)_p-SO_3^{\cdot}M^+$; M^+ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18.

27. (Original) Solar cell according to claim 25, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is a polythiophene according to formula (IV)



in which X and Y are O; Z is $-(CH_2)_m-CR^3R^4-(CH_2)_n-$; R^3 is hydrogen or $-(CH_2)_s-O-(CH_2)_p-SO_3^{\cdot}M^+$; R^4 is $-(CH_2)_s-O-(CH_2)_p-SO_3^{\cdot}M^+$; M^+ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18; and q is a whole number from 2 to 10,000.

28. (Original) Solar cell according to claim 25, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly[4-(2,3-dihydro-thieno[3,4-*b*][1,4]dioxin-2-ylmethoxy)-butane-1-sulphonic acid].

29. (Original) Solar cell according to claim 25, wherein said polymer is selected from the group consisting of: poly(3,4-methylene-dioxythiophene), poly(3,4-methylenedioxythiophene) derivatives, poly(3,4-ethylenedioxythiophene), poly(3,4-ethylenedioxythiophene) derivatives, poly(3,4-propylenedioxy-thiophene), poly(3,4-propylenedioxythiophene) derivatives, poly(3,4-butylenedioxythiophene), poly(3,4-butylenedioxy-thiophene) derivatives and copolymers therewith.

30. (Original) Solar cell according to claim 25, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly(3,4-ethylenedioxythiophene).

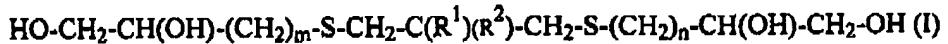
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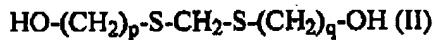
31. (Original) Solar cell according to claim 25, wherein said layer further contains a polyanion.

32. (Original) Solar cell according to claim 31, wherein said polyanion is poly(styrene sulphonate).

33. (Original) A transistor consisting of a layer configuration on a support, said layer configuration comprising a layer containing a polymer containing optionally substituted 3,4-alkylenedioxy-thiophene structural units, in which said two alkoxy groups may be the same or different or together represent an optionally substituted oxy-alkylene-oxy bridge, and a compound selected from the group consisting of polyphosphoric acids, polyphosphoric acid salts, thia-alkanedicarboxylic acids, cyclohexadiene compounds and polyhydroxy-compounds selected from the group consisting of tetrone acid derivatives; ortho-dihydroxybenzene compounds with at least one sulfo group, compounds according to formula (I):

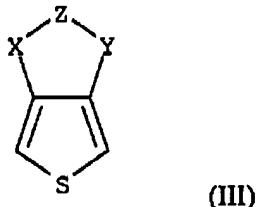


wherein R¹ and R² are independently H, -OH or alkyl, and n and m are independently 1, 2 or 3; compounds according to formula (II):



wherein p and q are independently 2, 3 or 4; compounds hydrolyzable to tetrone acid derivatives; compounds hydrolyzable to compounds according to formula (I); and sulfo-substituted 2-thia-alkyl-benzimidazole compounds.

34. (Original) Transistor according to claim 33, wherein said optionally substituted 3,4-alkylenedioxythiophene structural units are represented by formula (III):

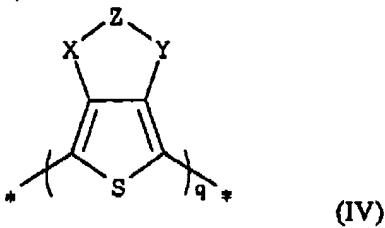


in which X and Y are O, Z is -(CH₂)_m-CR³R⁴-(CH₂)_n-; R³ is hydrogen or -(CH₂)_s-O-(CH₂)_p-SO₃⁻M⁺; R⁴ is -(CH₂)_s-O-(CH₂)_p-SO₃⁻M⁺; M⁺ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18.

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35. (Original) Transistor according to claim 33, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is a polythiophene according to formula (IV)



in which X and Y are O; Z is $-(CH_2)_m- CR^3 R^4 -(CH_2)_n-$; R^3 is hydrogen or $-(CH_2)_s-O-(CH_2)_p-SO_3^- M^+$; R^4 is $-(CH_2)_t-O-(CH_2)_p-SO_3^- M^+$; M^+ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18; and q is a whole number from 2 to 10,000.

36. (Original) Transistor according to claim 33, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly[4-(2,3-dihydro-thieno[3,4-*b*][1,4]dioxin-2-ylmethoxy)-butane-1-sulphonic acid].

37. (Original) Transistor according to claim 33, wherein said polymer is selected from the group consisting of: poly(3,4-methylene-dioxythiophene), poly(3,4-methylenedioxythiophene) derivatives, poly(3,4-ethylenedioxythiophene), poly(3,4-ethylenedioxythiophene) derivatives, poly(3,4-propylenedioxy-thiophene), poly(3,4-propylenedioxythiophene) derivatives, poly(3,4-butylenedioxythiophene), poly(3,4-butylenedioxy-thiophene) derivatives and copolymers therewith.

38. (Original) Transistor according to claim 33, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is poly(3,4-ethylenedioxythiophene).

39. (Original) Transistor according to claim 33, wherein said layer further contains a polyanion.

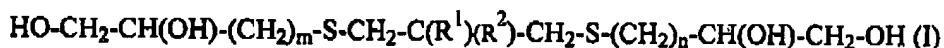
40. (Original) Transistor according to claim 39, wherein said polyanion is poly(styrene sulphonate).

41. (Original) An electroluminescent device consisting of a layer configuration on a support, said layer configuration comprising a layer containing a polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units, in which said two alkoxy groups may be the same or different or together represent an optionally substituted oxy-alkylene-oxy bridge, and a compound selected from the group consisting of polyphosphoric acids, polyphosphoric acid salts, thia-alkanedicarboxylic acids, cyclohexadiene compounds and polyhydroxy-compounds selected from the

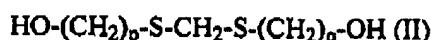
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group consisting of tetrone acid derivatives; ortho-dihydroxybenzene compounds with at least one sulfo group, compounds according to formula (I):

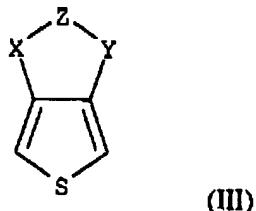


wherein R¹ and R² are independently H, -OH or alkyl, and n and m are independently 1, 2 or 3; compounds according to formula (II):



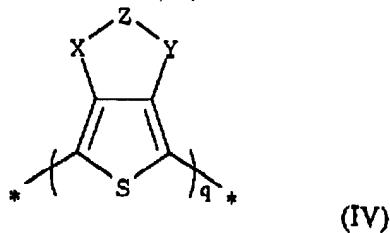
wherein p and q are independently 2, 3 or 4; compounds hydrolyzable to tetrone acid derivatives; compounds hydrolyzable to compounds according to formula (I); and sulfo-substituted 2-thia-alkyl-benzimidazole compounds.

42. (Original) Electroluminescent device according to claim 41, wherein said optionally substituted 3,4-alkylenedioxythiophene structural units are represented by formula (III):



in which X and Y are O, Z is -(CH₂)_m-CR³R⁴-(CH₂)_n; R³ is hydrogen or -(CH₂)_s-O-(CH₂)_p-SO₃⁻M⁺; R⁴ is -(CH₂)_s-O-(CH₂)_p-SO₃⁻M⁺; M⁺ is a cation; m and n are independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18.

43. (Original) Electroluminescent device according to claim 41, wherein said polymer containing optionally substituted 3,4-alkylenedioxythiophene structural units is a polythiophene according to formula (IV)



in which X and Y are O; Z is -(CH₂)_m-CR³R⁴-(CH₂)_n; R³ is hydrogen or -(CH₂)_s-O-(CH₂)_p-SO₃⁻M⁺; R⁴ is -(CH₂)_s-O-(CH₂)_p-SO₃⁻M⁺; M⁺ is a cation; m and n are

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independently a whole number from 0 to 3; s is a whole number from 0 to 10; and p is a whole number from 1 to 18; and q is a whole number from 2 to 10,000.

44. (Original) Electroluminescent device according to claim 41, wherein said polymer containing optionally substituted 3,4-alkylenedioxy-thiophene structural units is poly[4-(2,3-dihydro-thieno[3,4-*b*][1,4]dioxin-2-ylmethoxy)-butane-1-sulphonic acid].
45. (Original) Electroluminescent device according to claim 41, wherein said polymer is selected from the group consisting of: poly(3,4-methylenedioxy-thiophene), poly(3,4-methylenedioxythiophene) derivatives, poly(3,4-ethylenedioxythiophene), poly(3,4-ethylenedioxythiophene) derivatives, poly(3,4-propylenedioxy-thiophene), poly(3,4-propylenedioxythiophene) derivatives, poly(3,4-butylenedioxythiophene), poly(3,4-butylenedioxy-thiophene) derivatives and copolymers therewith.
46. (Original) Electroluminescent device according to claim 41, wherein said polymer containing optionally substituted 3,4-alkylenedioxy-thiophene structural units is poly(3,4-ethylenedioxy-thiophene).
47. (Original) Electroluminescent device according to claim 41, wherein said layer further contains a polyanion.
48. (Original) Electroluminescent device according to claim 47, wherein said polyanion is poly(styrene sulphonate).

This listing of claims replaces all prior versions, and listings, of claims in the application.